Claims

1. Injection element (10), in particular for a rocket drive, with an inner element (12) with a first outlet opening and an outer element (14) arranged coaxially thereto with at least one second outlet opening arranged coaxially to the first outlet opening for receiving and injecting fuel in a combustion space, characterized in that the outer element (14) in addition has third outlet openings in the form of bores (16) for forming a cooling liquid film layer, which bores are arranged coaxially to the first and second outlet openings.

2. Injection element according to claim 1, characterized in that the outer element (14) has a swirler space (18) in which the bores (16) are provided.

3. Injection element according to claim 2, characterized in that the bores (16) are provided in a tapering area (20) of the swirler space (18).

4. Injection element according to claim 2, characterized in that the bores (16) are arranged and aligned in the outer element (14) such that the cooling liquid film layer and the fuel injecting into the combustion space just after entry into the combustion space do not touch one another or mix.

5. Injection element according to one of the preceding claims, characterized in that the bores (16) change over into an annular gap (22) to generate a swirl.

6. Injection element (10), in particular for a rocket drive, with an inner element (12) with a first outlet opening and an outer element (14) arranged coaxially thereto with at least one second outlet opening arranged coaxially to the first outlet opening for receiving and injecting fuel into a combustion space, characterized in that the inner element (12) has third outlet openings in the form of bores (16) for forming a cooling liquid film layer, which bores are arranged coaxially to the first and second outlet openings.

7. Injection element according to one of the preceding claims, characterized in that the bores (16) are uniformly distributed over the entire circumference of the outer or inner element (14).

8. Injection element according to one of claims 1 through 6, characterized in that the bores (16) are uniformly distributed over a part of the circumference of the outer or inner element (14).

9. Injection element according to one of the preceding claims, characterized in that the bores (16) are aligned such that liquid jets exiting from them mix with liquid jets exiting from component feed bores (52, 54).

10. Use of an injection element (10) according to one of the preceding claims in a rocket engine that has a combustion space.

11. Use according to claim 10, characterized in that the at least one injection element (10) is arranged such that the cooling liquid film layer exiting from it is directed at least in part towards the combustion space inner wall (26).